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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KALAM, ABUL

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,438	Applicant(s) AUERBACH ET AL.	
	Examiner Abul Kalam	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-33 is/are pending in the application.
- 4a) Of the above claim(s) 28-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 20, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/31/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 14-27, in the reply filed on October 7, 2008, is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 14-19 and 21-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Hase et al. (WO/2003/030247, cited by Applicant; for examination purposes US 7,402,457 will be used as a translation for the PCT Application) in view of Skipor et al. (US 2004/0007784).

Regarding claim 14, Hase discloses an electrical device (Figs. 2A-2G) comprising:

a substrate (10-12, Fig. 2A);

an electrical component (2, Fig. 2A) mounted on the substrate, the substrate (10-12) and the electrical component (2) defining a surface contour; and a covering film (3,

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Fig. 2B) having at least one part connected to the electrical component (2) and to the substrate (10-12) such that the surface contour defined by the electrical component (3) and the substrate (10-12) is mapped in a surface contour of the covering film (3), wherein the covering film is formed of a composite material comprising a plastic material (col. 3, Ins. 13-16).

Thus, Hase discloses all the limitations of the claim with the exception of explicitly disclosing wherein said composite material comprises a plastic material and at least one filler material that is different from the plastic material. However, Skipor discloses an electronic package (1000, Fig. 12) wherein a composite material (1500) comprising a plastic material and at least one filler material that is different from the plastic material (§ [0052]-[0055]). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the teaching of Skipor into the invention of Hase, thereby forming a composite plastic material which comprises filler materials, for the disclosed intended purpose of improving the structure and reliability of the electronic device (§ [0056]).

Regarding claim 15, Skipor discloses wherein the composite material has a coefficient of thermal expansion that substantially matches a coefficient of thermal expansion of the electrical component.

Regarding claim 16, Hase and Skipor do not disclose a range of “7ppm/K to 50 ppm/K” for the coefficient of thermal expansion. However, it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d

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454, 105 USPQ 233, 234 (CCPA 1955). Furthermore, where patentability is said to be based upon a particular chosen range or dimension recited in a claim, the Applicant must show that the chosen range or dimension is critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to form a composite material having a coefficient of thermal expansion within such a range as claimed, because the range is not critical since it can be optimized during routine experimentation, depending upon the desired thermal/electrical conductivity of the cover layer.

Regarding claims 17 and 23, Skipor discloses wherein the filler material is thermally and/or electrically conductive (§ [0055]).

Regarding claim 18 and 24, Skipor discloses wherein the filler material is in a powder and/or fiber form (§ [0055]).

Regarding claim 19 and 25, Hase discloses wherein the electrical device has an additional film (4, Fig. 2D) formed on at least part of the electrical component (2) and at least part of the substrate (10-12) such that the surface contour of the electrical component and the substrate is mapped in a surface contour of the additional film (4, Fig. 2D).

Regarding claims 21 and 22, Hase discloses wherein the electrical component (2) is a semiconductor component in the form of a transistor (col. 5, ln. 43).

Allowable Subject Matter

2. Claims 20, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 20 and 26, the prior art of record does not anticipate nor render obvious all the limitations of the claims, including: wherein the additional film is formed of a composite material comprising a filler material that is different from the filler material of the covering film. Claim 27 depends from claim 26, and thus, also contains the same allowable subject matter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul Kalam whose telephone number is (571)272-8346. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. K./
Examiner, Art Unit 2814

/Phat X. Cao/
Primary Examiner, Art Unit 2814